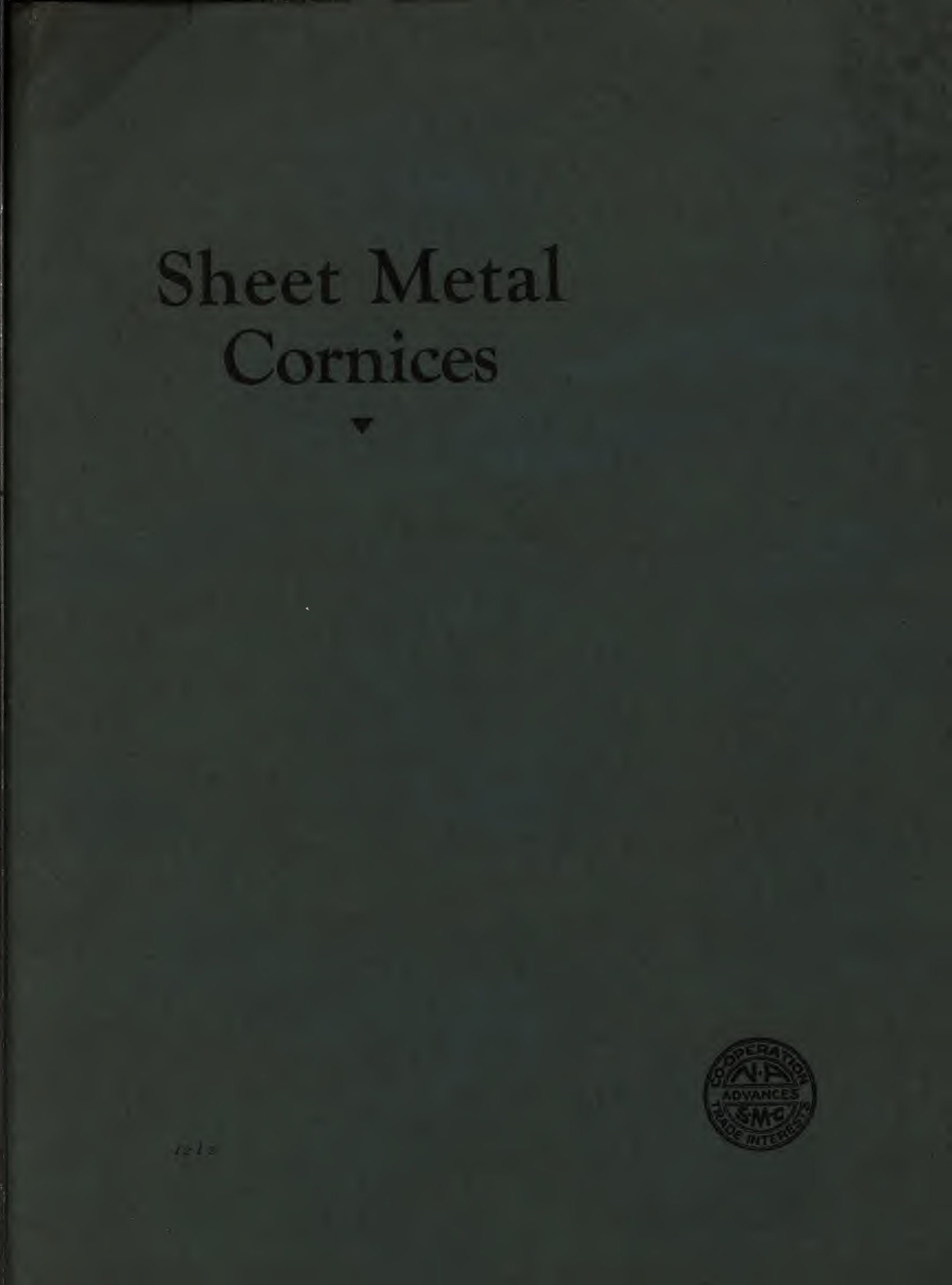
Sheet Metal Cornices



SHEET METAL CORNICES

PUBLISHED BY

The Cornice and Educational Publicity Committee in cooperation with The Trade Development Committee

of the

NATIONAL ASSOCIATION *of* SHEET METAL CONTRACTORS

608 CHESTNUT STREET
Philadelphia
PENNA.

Preface

THIS book has been prepared to place at the disposal of architects and contractors suggestions on specifications for sheet metal cornices, together with a number of illustrations showing approved methods of construction. It is the forerunner of a book being prepared by the Trade Development Committee of the National Association of Sheet Metal Contractors which will cover in a more comprehensive manner not only cornices, but every branch of sheet metal work in building construction.

This work was undertaken with a firm conviction that when properly constructed the metal cornice offers a solution to many structural problems of the present day encountered by the architect and engineer. At the same time it offers many outstanding advantages, among which are its lightness, durability, relative low cost, fire protection and safety.

It is the sincere belief of the committee compiling this booklet that if the methods of construction as outlined are followed, the sheet metal cornice will take its rightful place in the construction of any modern building, and result in complete satisfaction to the owner and gratification to the architect and to those who erect it.

THE COMMITTEE

June 1, 1925

Typical Cornice and Gutter Construction for Residences, Stores, Etc.

ON the opposite page is shown in Drawing No. 1 a cornice and gutter construction in sheet metal suitable for dwellings, stores, schools and similar buildings. These cornices are sometimes made of wood, stone and like materials, but since the advent of architectural sheet metal work, cornices made of sheet metal, because of their many advantages, have found popular favor.

As in all construction, the work must be done properly, and one of the objectives of this example is to illustrate proper procedure for this type of construction.

Item No. I shows the dentil course, modillions, and soffit panelling.

Item No. II shows a side view of the conductor head, the profile of the cornice and other details. Note the construction of the wooden lookouts to which is fastened the cornice and which also supports the gutter.

Item No. III shows details of seams at cross section of soffit panel.

Item No. IV shows a section through modillion on line *S S* and illustrates a method of connecting modillions to soffit.

Alternate methods of joints are shown in Items V, VI and VII, any of which are practical.

Small Cornice Supported on Wooden Lookouts

THE example presented in Drawing No. 19 is ideal construction for small buildings, erected in the smaller town and city. The procedure of erecting is decidedly popular because the laying of the wall can proceed without interruption up to the setting of the coping.

Item I comprises a partial front elevation. The cornice is of a simple design embellished with modillions only. The wall extends above the cornice forming a parapet. The slope of the cornice deck is toward the front, as per Item II, which necessitates a drip at the edge to prevent the water flowing over the edge from marring the cornice by coursing down the crown mold.

An alternate for this drip lock is shown by the enlarged view, Item V. Note that there is a drip edge at the base of the foot mold and also that but one other joint is necessary, at *A* of Item II, which joint is made fireproof and independent of the solder by the notch as per Item IV. The seams should be made as per Item I.

In Item II, is shown the method of inserting wood blocks in the brick wall to which the lookouts may be secured to support the cornice.

Cornice for a Building with High Roof Trusses

IN some types of buildings it is necessary to support the roof on long span trusses, so that the interior of the building will be free from obstructing piers or columns. Such trusses would have considerable height from their bottom chord to their apex, and this presents quite a problem in the facade treatment of the building.

The simplest treatment, of course, is to have gable ends with the roof pitching to both sides. In this case, however, the building is a garage having two fronts or facades and it was desirable to have horizontal roof lines. The solution to the problem was worked out as per Drawing No. 20. It will be seen that there are large door openings and show windows which are separated by brick piers.

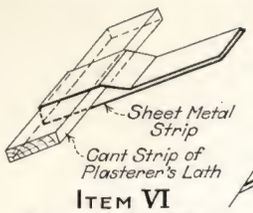
The piers support the roof trusses, which in this case are of wood. To these are framed 2 x 4-in. studs and thereto are spiked the wooden lookouts to support the sheet metal cornice. As per the note on the drawing, sheathing boards and suitable building paper back up the sheet metal work, which consists of a foot molding—in reality a separate cornice—and a crown, which again is really another separate cornice.

The sheet metal further consists of a truss bracket over alternate brick piers. These trusses are surmounted by spun sheet metal urns, and above the intermediate brick piers there are several attenuated panels, which are similar in design to the center part of the trusses.

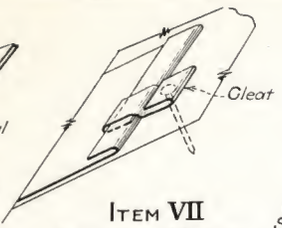
These panels break up the large expanse of pressed sheet metal frieze. The truss and panel designs are incorporated into an octagon shaped corner ornament which is topped out by a flag pole base in which is provided a sway joint to compensate for the movement of the flag pole.

The other front of the building is exactly like this item, insofar as the sheet metal work is concerned, except that the spacing of the truss brackets and of the panels, vary somewhat from the spacing of this front.

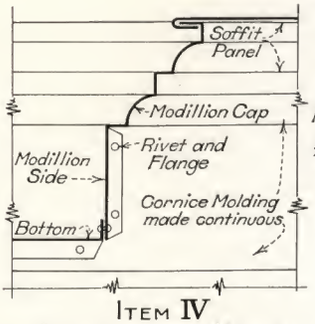
ITEM V
JOINT AT J - ITEM II IN LIEU OF JOINT AT J^x



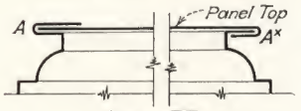
ITEM VI
ALTERNATE FOR STRIP AT C - ITEM II PLACED ON TOP OF GUTTER LINING



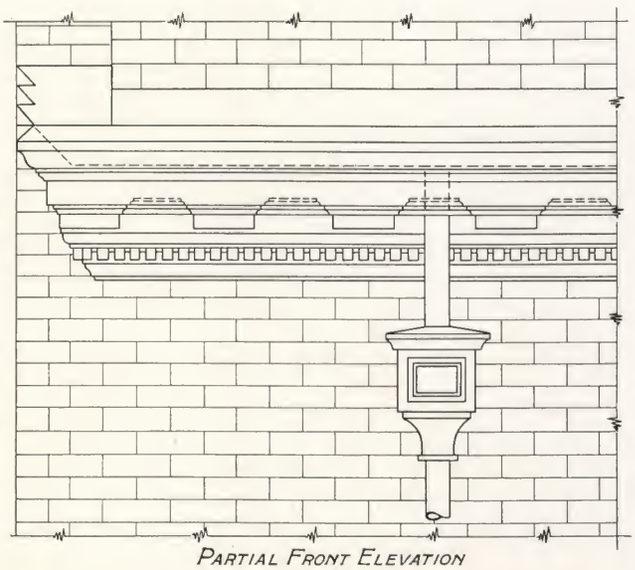
ITEM VII
ALTERNATE METHOD OF NAILING AT D - ITEM II



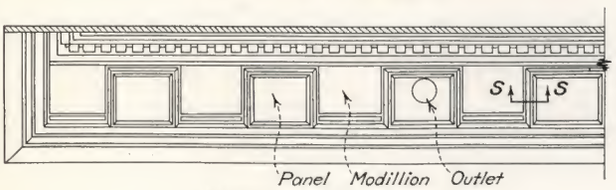
ITEM IV
SECTION THROUGH MODILLION ON LINE S-S - ITEM I



ITEM III
DETAIL OF SEAMS AT A AND A^x - ITEM II

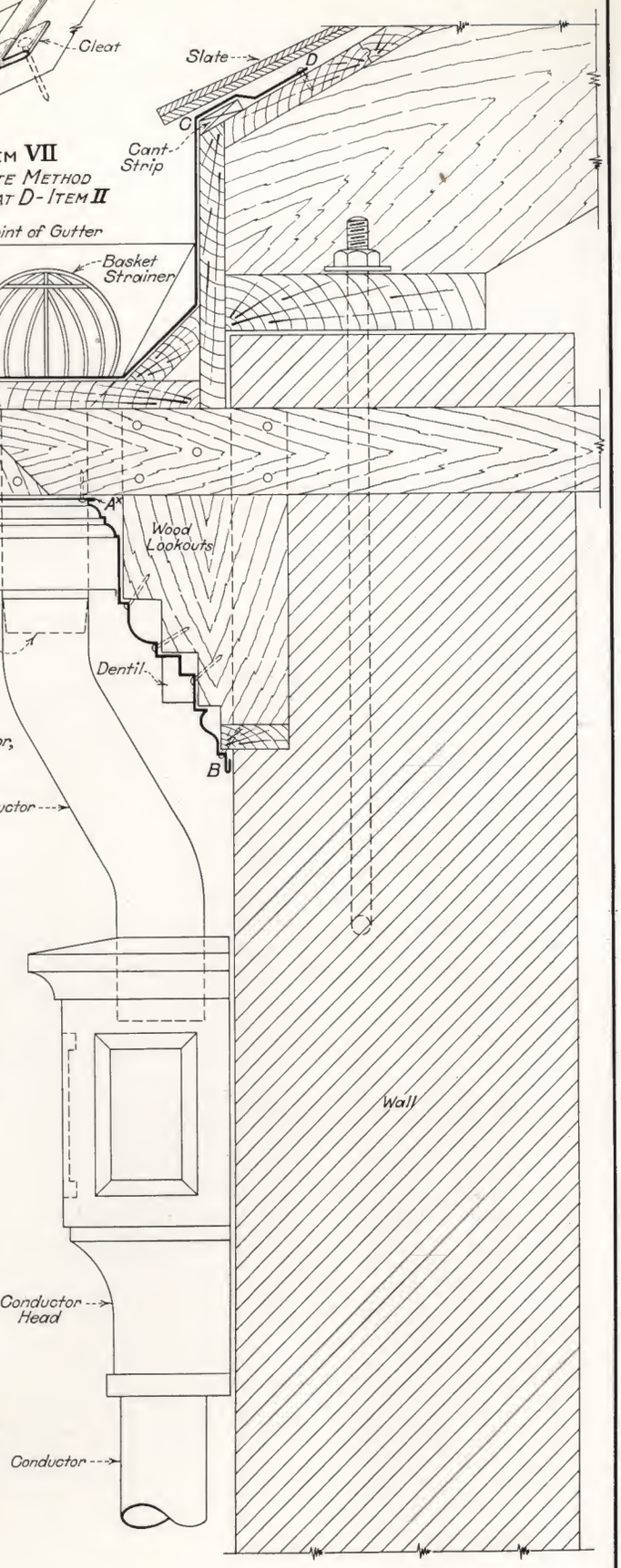


PARTIAL FRONT ELEVATION



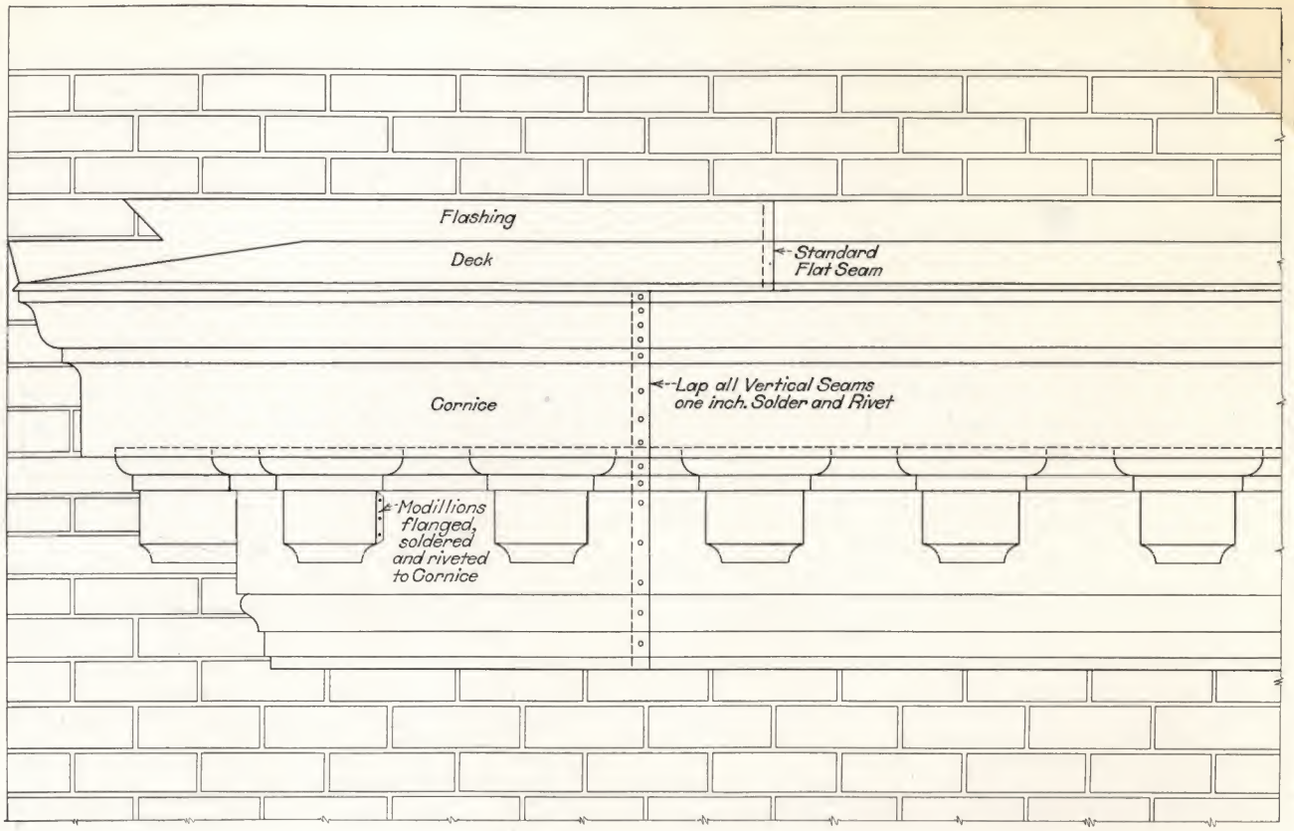
PARTIAL SOFFIT PLAN

ITEM I
PLAN AND ELEVATION OF CORNICE GUTTER
SCALE $\frac{1}{2}$" = 1'-0"

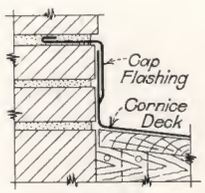


ITEM II
SECTION OF CORNICE GUTTER
SCALE 2" = 1'-0"

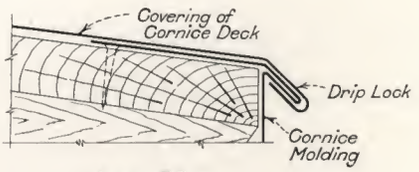
TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	DETAILS OF TYPICAL CORNICE GUTTER CONSTRUCTION	DRAWING NUMBER 1



ITEM I
PART FRONT ELEVATION
SCALE 1"= 1'-0"

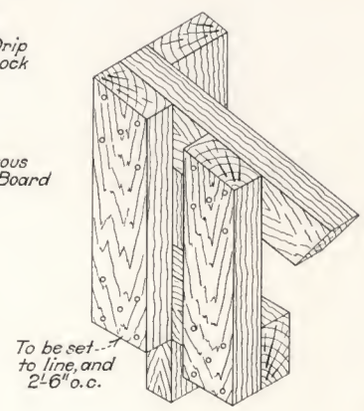


ITEM VI
ALTERNATE FLASHING

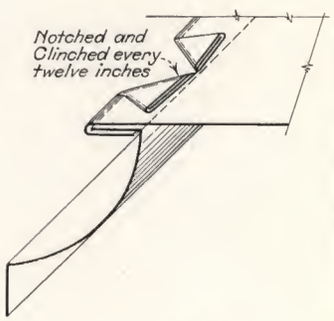


ITEM V
DRIP LOCK AT B OF ITEM II

ITEM II
SECTION
SCALE 1"=1'-0"

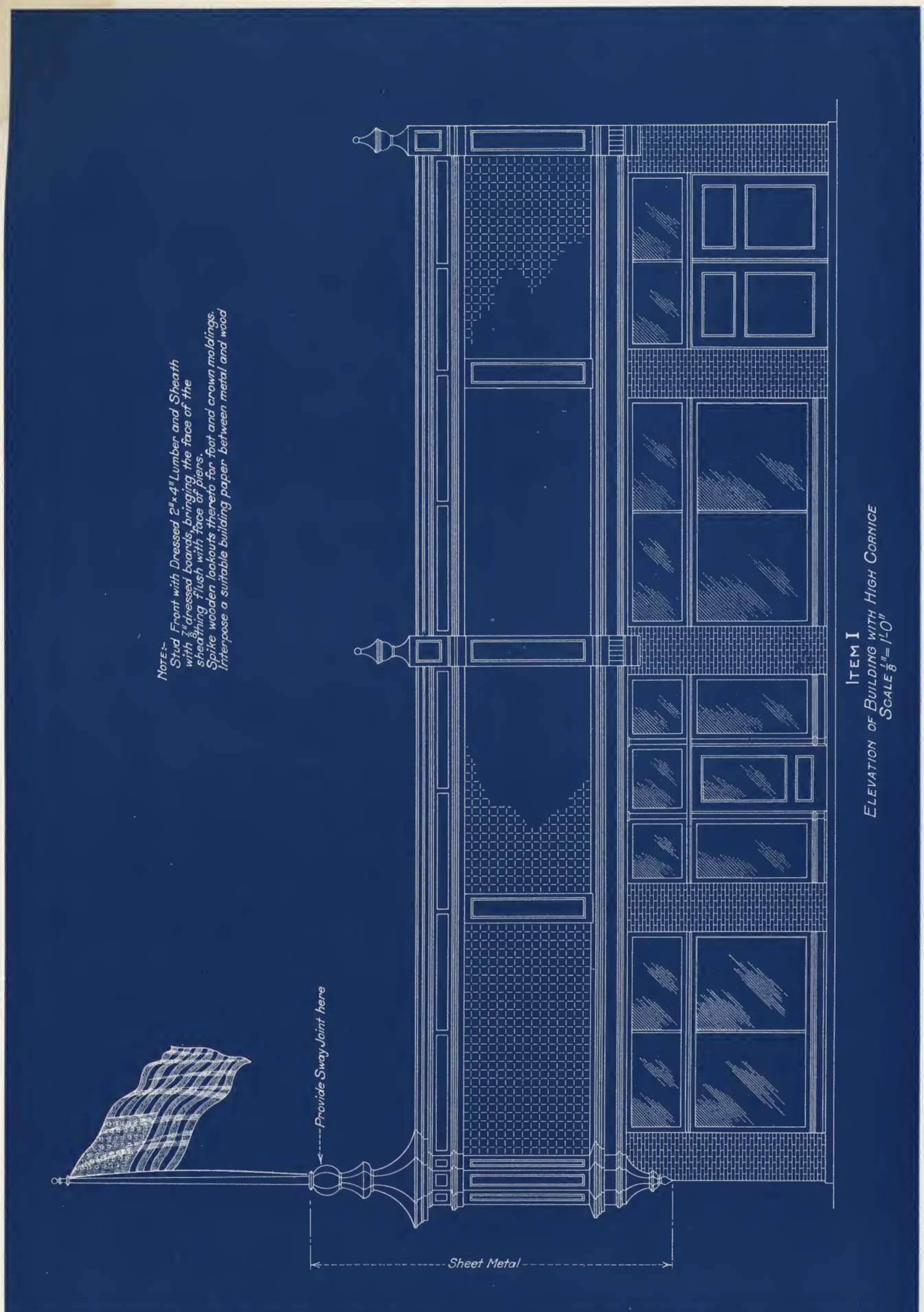


ITEM III
ISOMETRIC DRAWING OF 2"x 4" WOODEN LOOKOUT ASSEMBLY
SCALE 1"=1'-0"



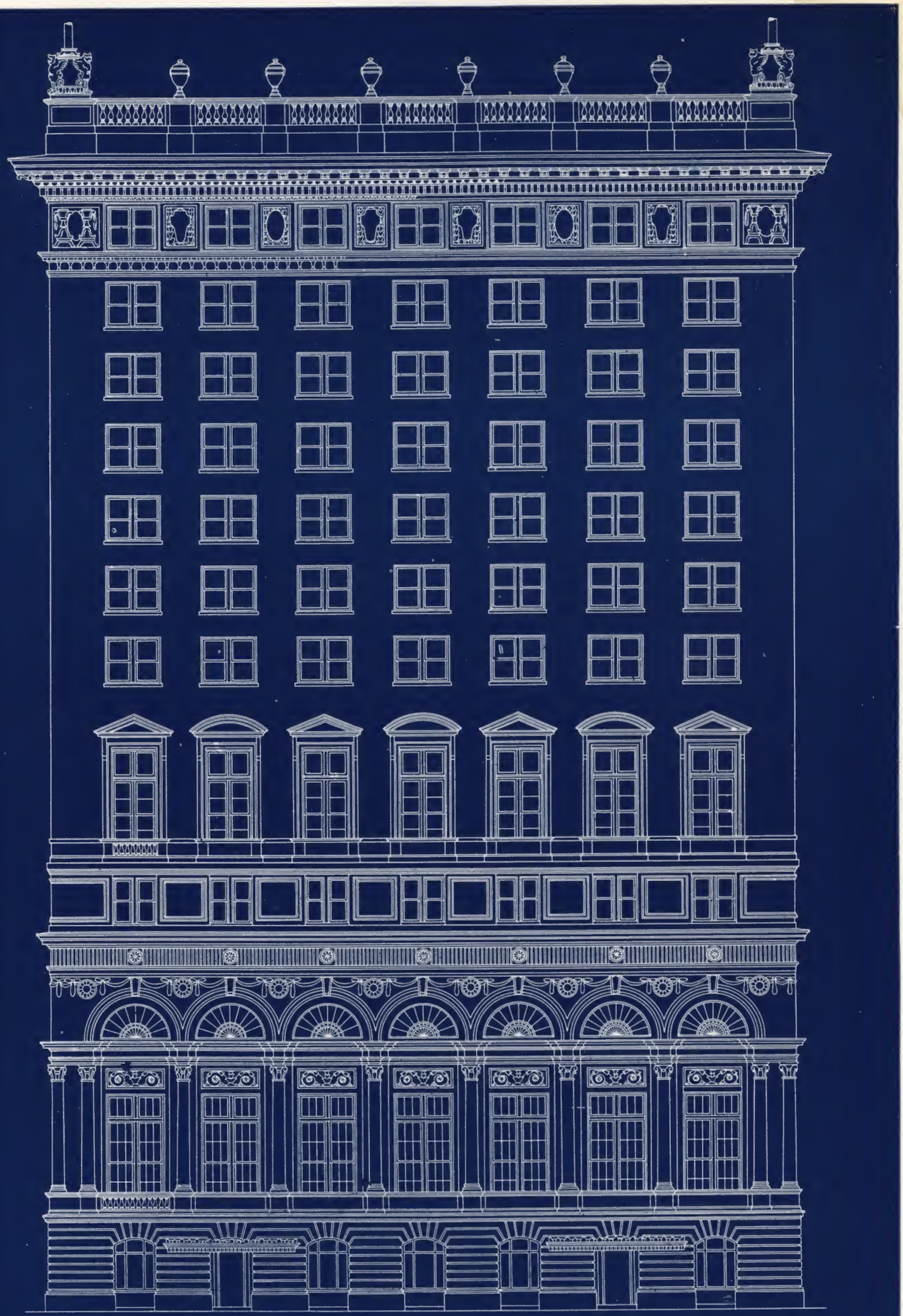
ITEM IV
LOCK AT A OF ITEM II

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	DETAILS OF SMALL CORNICE SUPPORTED ON WOODEN LOOKOUTS	DRAWING NUMBER 19



ITEM I
ELEVATION OF BUILDING WITH HIGH CORNICE
SCALE 1/8" = 1'0"

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	DETAILS OF CORNICE FOR A BUILDING WITH HIGH ROOF TRUSSES	DRAWING NUMBER 20



ITEM I

FRONT ELEVATION OF STRUCTURE

SCALE 0 1 2 3 4 5 6

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	DETAILS OF SHEET METAL CORNICE & BALUSTRADE OF FIREPROOF BUILDING	DRAWING NUMBER 3

Cornice and Balustrade of Fireproof Building

THE example in Item I, Drawing No. 3, is that of a tall structure with its cornice and balustrade made of sheet metal.

Beginning above the top story windows the sheet metal work is an enriched molding as per Item II, Drawing No. 3A; then, a dentil course, followed by a modillion course, with ornamental moldings and an enriched molding below. Between the modillions deep panels with rosettes enrich the planceer, as per Item III. Panelling also relieves the plain surface of the moldings between the modillions as shown in the front elevation, Item IV, which also shows the design of the enrichments for the moldings.

The crown molding has an ogee, which is undercut at its top to form a drip. This is essential because of water from the deck of the cornice spills over the front and this drip diverts the water from running down the face of the cornice.

A building of this type is ordinarily built by the modern steel skeleton system, and in the section drawing, Item II, the steel spandrel is shown. Some structures would also have the steel lookouts as a part of this system. In this case no provision was made in the steel specifications for the support of the sheet metal work. That was provided for in the specifications for the sheet metal work, which required the sheet metal contractor to furnish all necessary bracings, lookouts and the like.

The sectional drawing, Item II, shows the construction of the steel lookouts and the heavy band iron braces. The procedure was to make the cornice in convenient section lengths, and to bolt thereon the band iron bracing to the maximum spacing noted. The building of the wall should stop until the cornice has been set and all joints properly made.

Note that the wood nailing strips are lag-screwed to the lookouts as per Item V. This provides means for nailing the planking of the roof deck. As can be seen, it is necessary to bolt through from the outside of the cornice to fasten on the band iron braces, which leaves the bolt heads exposed. By counter-sinking the bolt holes of the braces, a flush surface is presented, as per Item VI, making the bolt head invisible. This is naturally a costly procedure. It is none too strong and should be employed only where the work is near the ground. When high up, as in this case, it is recommended that round head bolts and washers be specified for the greater security they offer. Brass bolts and washers should be required if the sheet metal work is of copper.

It will be seen that a standard flat seam is shown at *A* of Item II, to connect the cornice to the sheet metal deck cover. An alternate procedure is presented as Item VII, which method has many commendable points for consideration and should be acceptable in all such cases.

In backing up the cornice the mason should carry the wall right up to the balustrade as per Item VIII, Drawing No. 3B, which is a section of the balustrade on line A A of the front elevation. The base of the balustrade is just a flat surface broken by one line of a projecting member. Its purpose, of course, is merely to raise the balustrade a considerable height above the cornice deck, so that the balustrade can be seen from the street.

Blockings about as shown are provided to secure the base to the brick wall, and as shown in Item VIII. The base rail sets on planking which is bolted to the wall. The balusters, which are of spun sheet metal, are securely set in between the base and the top rail. Note that this top rail is strongly stiffened by wooden planking and joists.

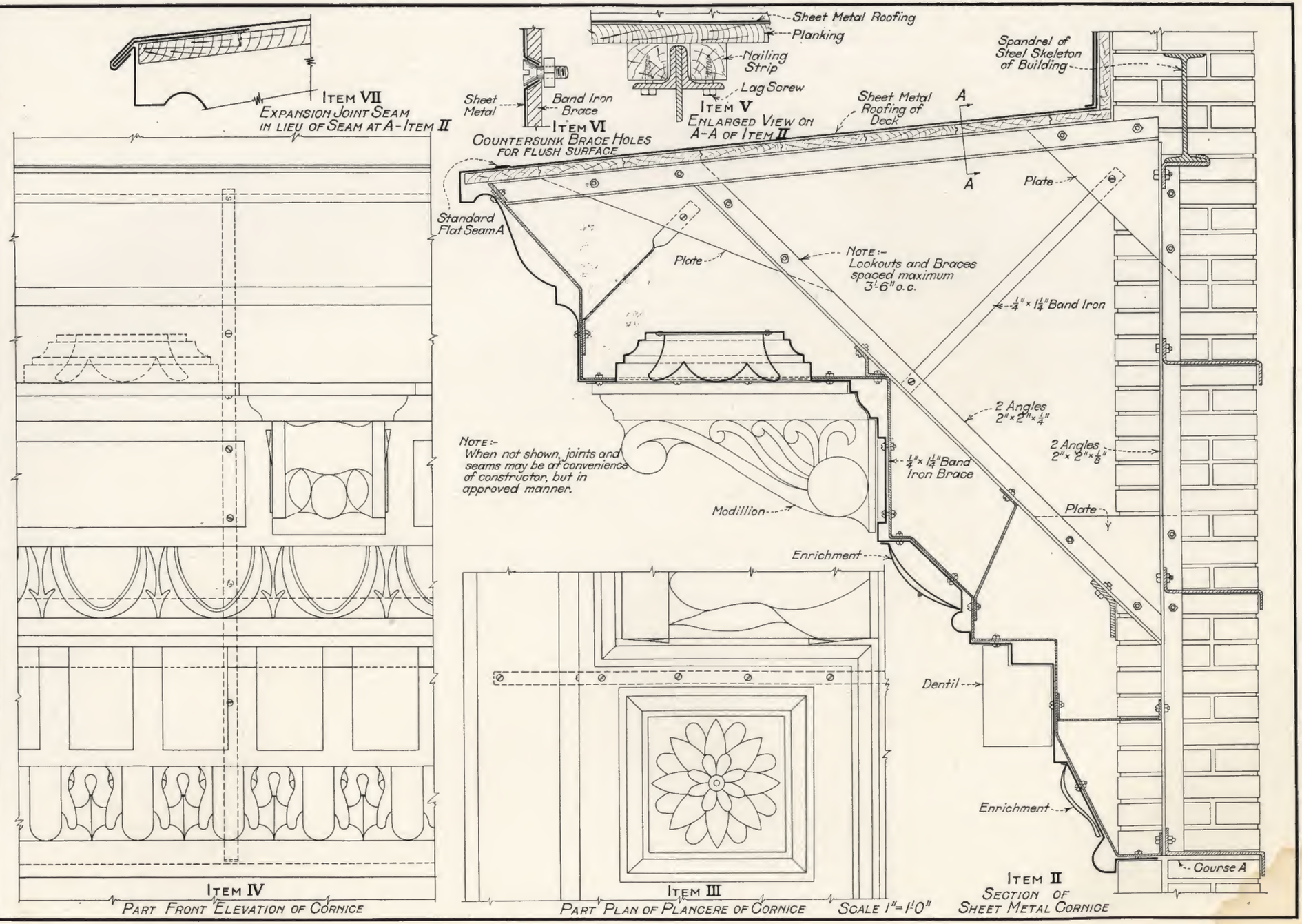
The two piers at either end of the building are quite broad, having a single panel and having superimposed thereon a highly ornamental base for the flag pole. These are entirely of stamped sheet metal, and attention is called to an important detail, which is that the flag pole must never be tightly clamped about at the base, as the swaying of the pole endangers the base. The method of taking care of this swaying is shown by Item X. Secure internal bracing is provided for these bases, which are further braced by an external angle iron strut, fastened to the roof, as per Item XI.

The intermediate piers are very narrow in comparison with the end one, and support highly ornamental urns of stamped sheet metal, as per Item IX. Owing to their size and height above the ground they present quite a resistance to wind strains, and are adequately braced internally against these strains as per Item VIII. No external braces or struts are required as they are deemed unnecessary. An upright angle iron, however, is bolted to the back of each pier, and expansion bolted to the wall as shown in Item VIII.

TRADE DEVELOPMENT COMMITTEE
NATIONAL ASSOCIATION SHEET METAL CONTRACTORS

DETAILS OF CORNICE FOR FIREPROOF BUILDING

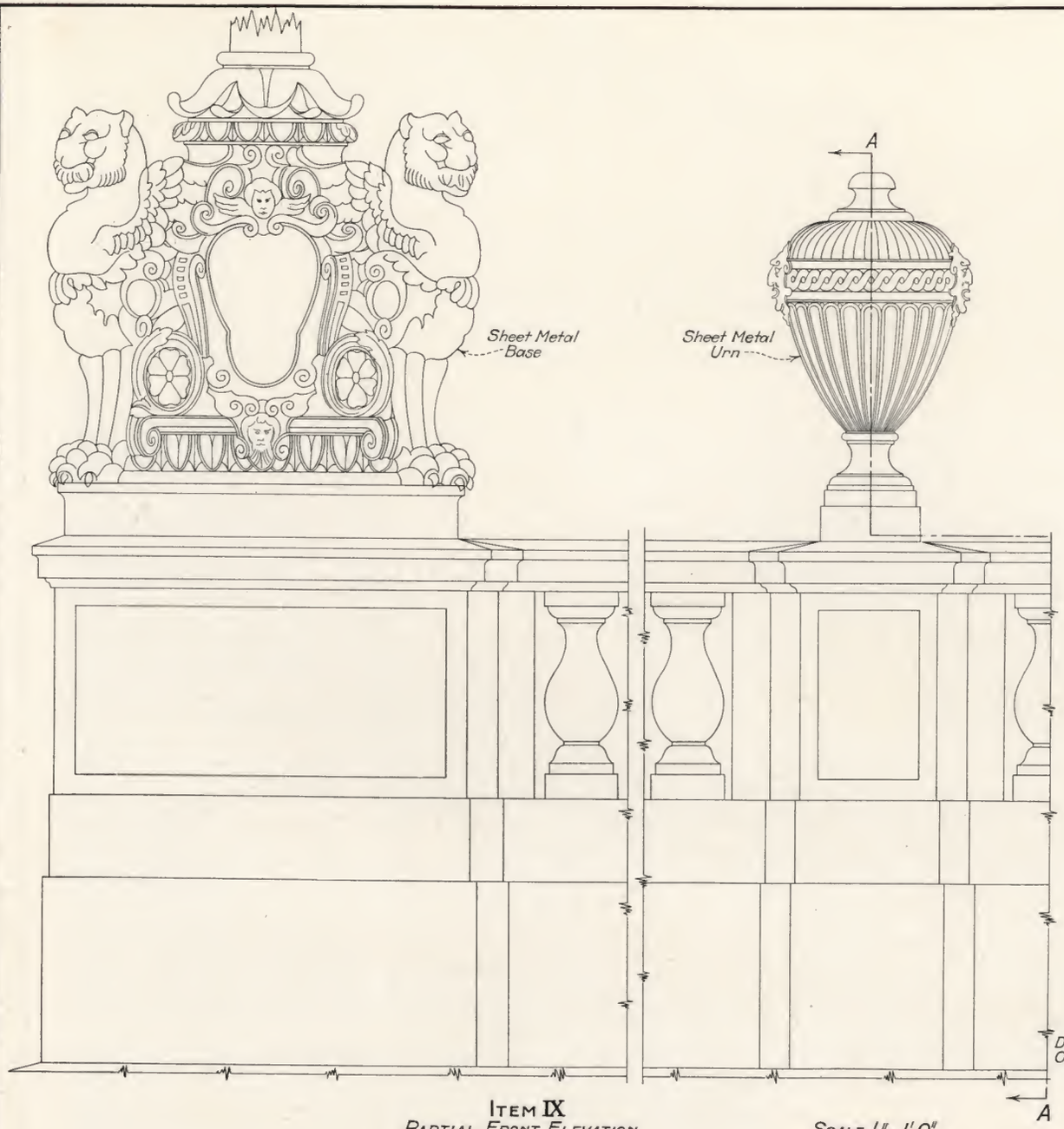
DRAWING NUMBER **3A**



TRADE DEVELOPMENT COMMITTEE
NATIONAL ASSOCIATION SHEET METAL CONTRACTORS

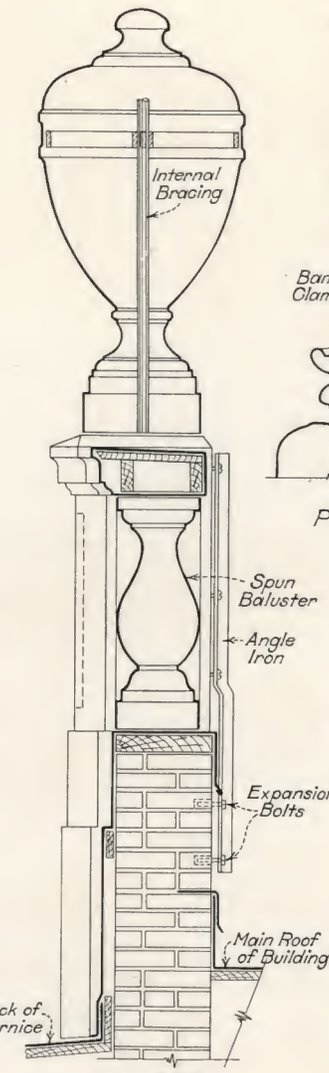
DETAILS OF BALUSTRADE ON FIREPROOF BUILDING

DRAWING NUMBER **3B**



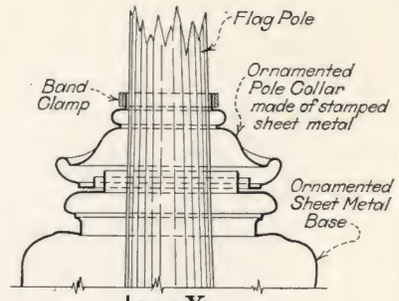
ITEM IX
PARTIAL FRONT ELEVATION

SCALE ½" = 1'-0"

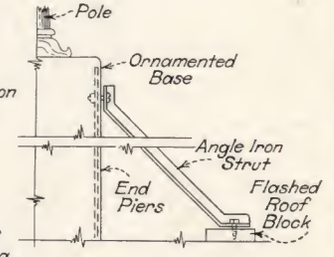


ITEM VIII
SECTION ON LINE A-A OF ITEM IX

NOTE:-
When not shown, joints and seams may be at convenience of constructor but in approved manner.



ITEM X
PROVISION FOR SWAYING OF FLAG POLE



ITEM XI
EXTERNAL BRACING FOR END PIERS

An Extended Overhanging Cornice

THE example illustrated in Plate No. 24 may be pointed to as one of the most notable examples of overhanging cornice construction in existence, and it serves as an eminently fitting crowning feature for the magnificent building on which it is located.

This great cornice of the Illinois Merchants Bank Building of Chicago, was inspired by one found on the Casa Consistorial of Palma, Majorca, an island in the Mediterranean off the coast of Spain. In the adaptation of this outstanding example of the middle ages, the general character of its detail was changed from Spanish to Classic in order to better harmonize with the architecture of the bank itself.

The cornice is 284 ft. above the sidewalk. It contains 991 lineal feet on the entire perimeter of the building, bounded by Jackson Boulevard, La Salle, Quincy and Clark Streets. From the abacus of the pilaster capitols the cornice is extended up in terra cotta approximately 12 ft., but with no overhang. From this point to the roof line, 5 ft. 7-1/2 in., the space is occupied by the metal part of the cornice with its unusually deep projection, its heavy brackets and other ornamentations. The shell and torch cresting, also of metal, extends approximately 2 ft. above the roof line. The depth of the projection varies from 4 ft. 6 in. to 9 ft. 1 in., according to the maximum projection beyond the lot line of the several streets as permitted by the Building Ordinance.

The cornice proper is made of 16 oz. copper with the ornamentation in 16, 18 and 20 oz. copper. It was finished by artificial oxidation, giving it the light green color of verdigris.

It will be readily appreciated that if an attempt were made to carry out a design of this kind with so deep a projection in anything but metal, the structural problem of supporting the necessarily heavy material would have to be solved, and even with every possible precaution, it would be difficult to secure the same safety to pedestrians on the street below throughout the life of the building.

A Typical Tall Sheet Metal Cornice and Balustrade

DRAWINGS No. 2 and No. 2A are presented as an illustration of the fact that for the exterior embellishment of buildings it is possible to execute in sheet metal almost any design which an architect may desire. Due to the perfection of modern press work and spinning, the most intricate details can be faithfully followed.

As per a note on the drawing, the seams, joints and the like, can be placed at the convenience of the constructor; so also the cornice can be erected in convenient lengths and as one piece from the lower drip to the lock drip at the top, or *A,* if the contractor so desires. It is recommended, however, that a field seam be employed, which makes it more easily handled and erected.

This cornice is constructed by fabricating the foot mold and frieze, that is, from the lower drip to the upper drip, Item II, complete in convenient lengths. When the wall has been built up as far as the lower drip, the building of the wall is stopped until the frieze of the cornice is set on the wall and in position and held by means of temporary supports. The seams and other joints are finished and the wall then built up to the roof line with the anchors and anchor bolts with the steel channel lookouts built therein.

The upper part of the cornice, which is also fabricated in convenient lengths and complete from the upper drip to *A,* is now set on the angle iron at the upper drip and bolted thereto and to the anchor just above, all as shown. The parts which are labeled "stamped enrichment" are planted on the main body of the cornice and securely held thereto by solder, rivets or perhaps twisted wires. The modillions and soffit rosettes in the planceer are also sheet metal stampings designed in accord with Item I, and also planted on in the same manner as the enrichment, and are spaced as per Item I.

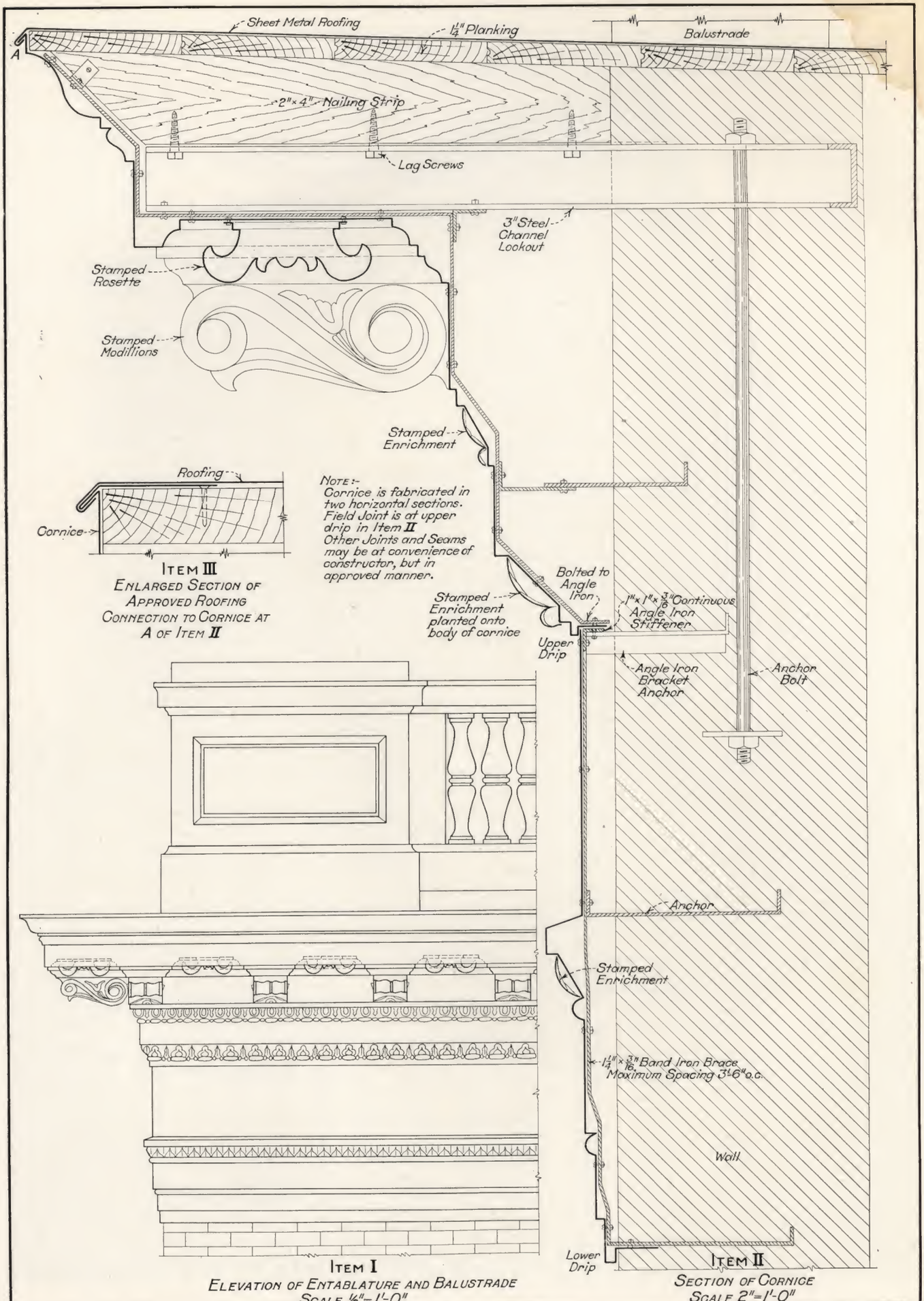
A wood nailing strip is lag-screwed on to the channel lookout. Item II shows the wood strip stopped at the wall, but if there is no other way to nail down the roof planks it can be carried the full length of the lookout and thus provides a means of fastening the cornice deck planking.

The sheet metal roofing is connected to the cornice at *A* of Item II, as per the enlarged connection in Item III. This roofing is laid under the rails of the balustrade as per Item IV, Drawing No. 2A, and is carried up to the upright wooden bracing of the pylons or piers, as a base flashing, as per Item V. Item IV is a vertical section of the rails of the balustrade. This shows wood framing to support and stiffen these pylons but steel can be used in place of this wood framing. The bottom rail is raised above the roof chiefly for drainage reasons, but this design also allows painters and others to rig their ropes on the more solid main roof rather than on the balustrade.

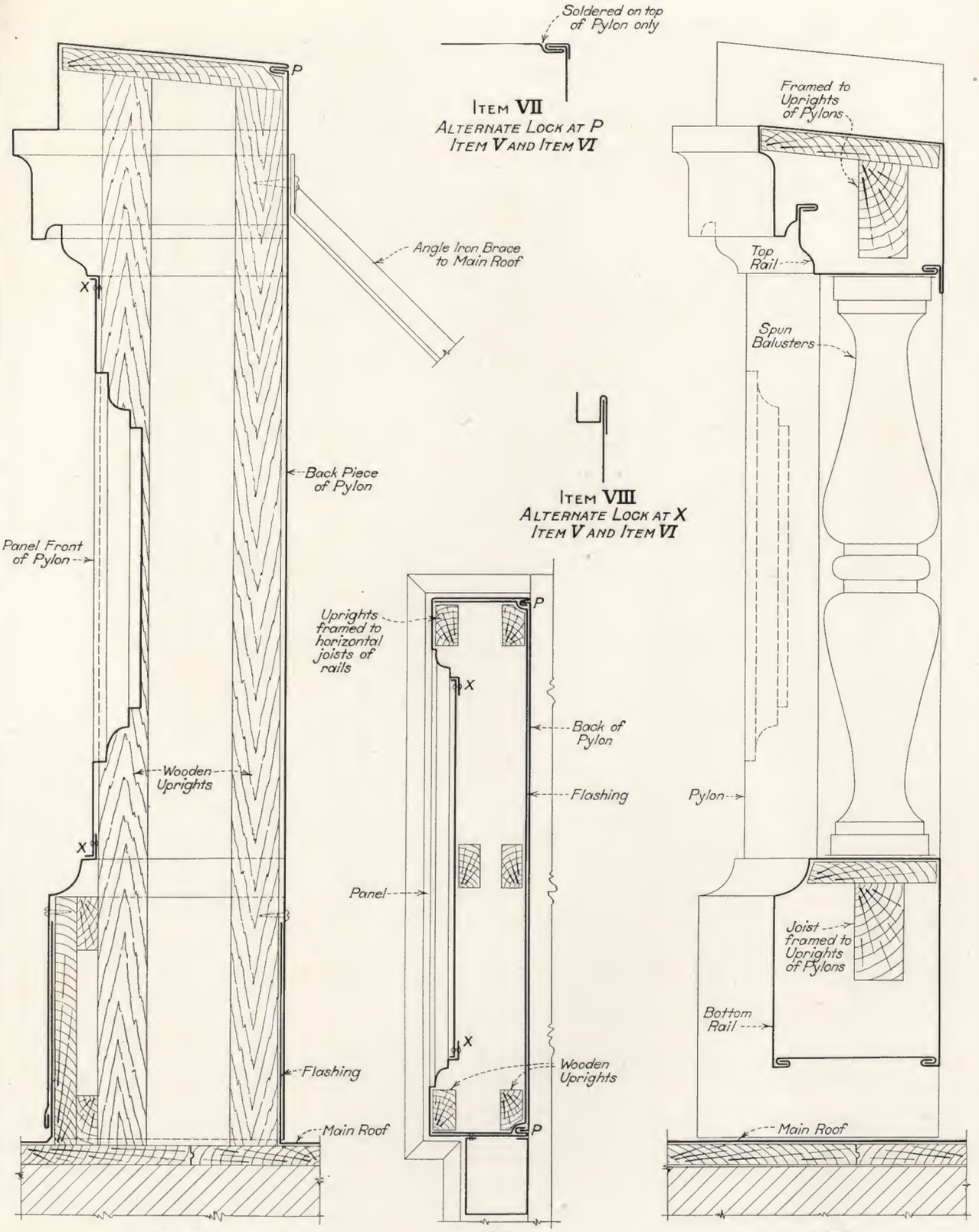
Item V is a vertical section of the pylon which shows the wood backing and flashing. This idea of having the roofing as a base flashing and the pylon as a cap flashing, is much better than merely running the roofing under the pylons as under the rails and the turning out of a flange on the pylon and soldering it to the roofing.

Item VI is a horizontal section of the pylon. Note that the back is in a separate piece. This is done for the reason that access is required to the inside of the pylons during erection. Alternate lock seams that may be used in this construction are shown in Items VII and VIII.

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	SHEET METAL CORNICE ON MERCHANTS BANK BUILDING - CHICAGO, ILL.	DRAWING NUMBER 24



TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	DETAILS OF A TYPICAL TALL SHEET METAL CORNICE & BALUSTRADE	DRAWING NUMBER 2



ITEM VII
ALTERNATE LOCK AT P
ITEM V AND ITEM VI

ITEM VIII
ALTERNATE LOCK AT X
ITEM V AND ITEM VI

ITEM V
VERTICAL SECTION THROUGH PYLON
SCALE 2"=1'-0"

ITEM VI
HORIZONTAL SECTION THROUGH PYLON
SCALE 1"=1'-0"

ITEM IV
VERTICAL SECTION THROUGH RAILS
SCALE 2"=1'-0"

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	DETAILS OF TYPICAL SHEET METAL BALUSTRADE	DRAWING NUMBER 2A

A Semi-Circular Stairway in Light Court

DRAWING No. 30 shows a view of the rear of the Carnegie Building, 434 Fifth Avenue, Pittsburgh, Pa., with a semi-circular stairway in the light court. The building proper is equipped with a metal cornice of massive design, and the stairway is topped with a horizontally curved cornice.

This was the first structural steel office building erected in Pittsburgh, and was completed in the Spring of 1894.

The stairway shown is semi-circular, making a half turn from floor to floor. It is located in the court at the end of the elevator corridor and is the main stairway of the building.

This stairway is covered with 16-oz. cold-rolled copper applied to wood backing secured to the steel structure. On June 11, 1924, when the photos of the panel were made, the material on careful inspection was found to be in first-class condition. There has been no expense incurred for repairs or painting since the work was erected.

Metal Cornice on Banking Building

DRAWING No. 21 presents the details of the sheet metal cornice on the Elyria Bank of Savings, Elyria, Ohio, a general view of which is shown in Plate No. 21A.

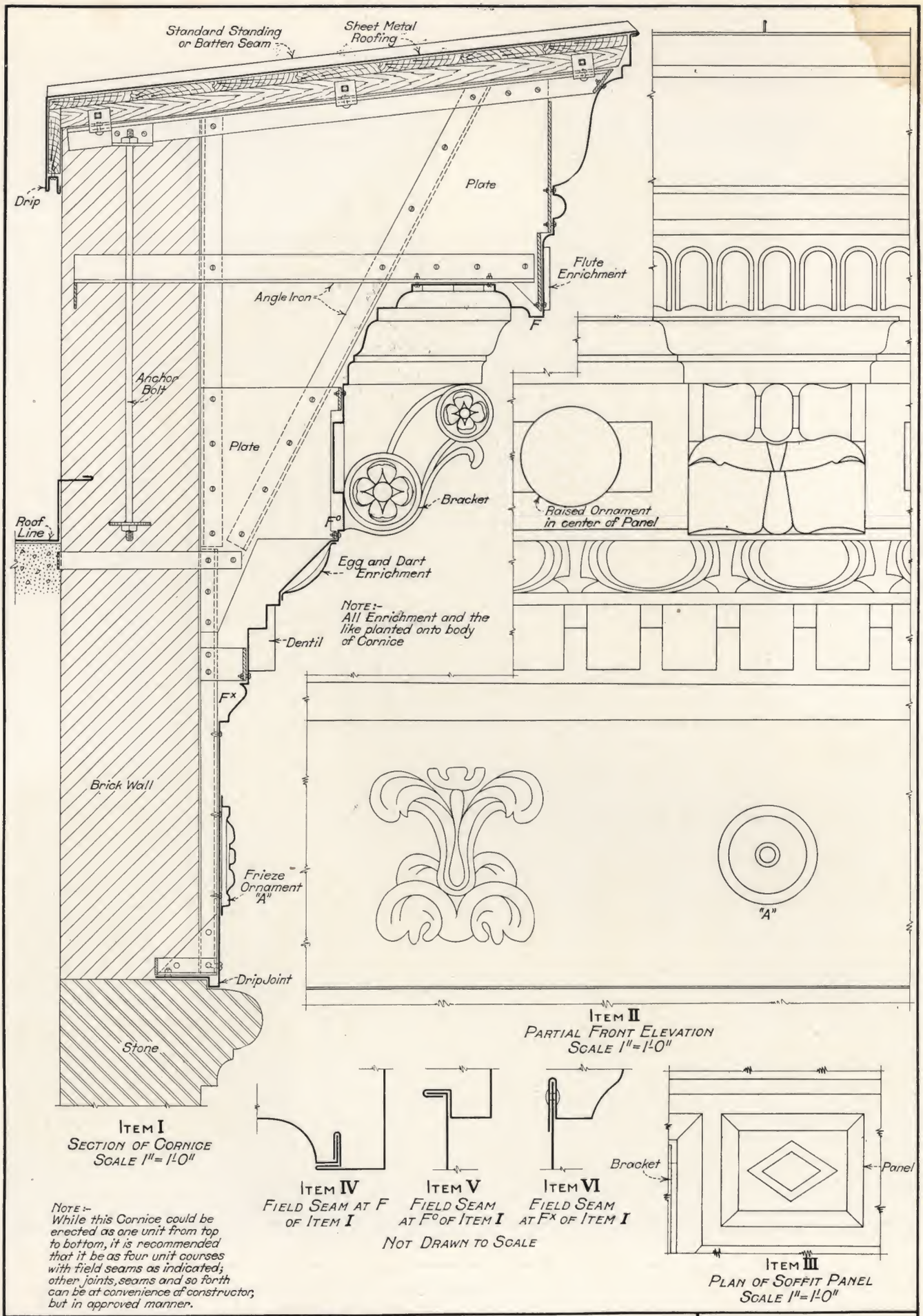
This work was designed by one of the leading architects of Cleveland, Ohio, and the sheet metal work was executed by one of the members of the National Association of Sheet Metal Contractors.

It is an outstanding example of a cornice made of heavy gauge metal, with all work done in a careful and painstaking manner. The metal used was 20 gauge galvanized material, with all joints and seams well riveted or clinched in an approved manner, and the cornice bolted to the steel work with galvanized iron bolts.

The contract required the sheet metal contractor to furnish and erect the metal cornice complete, including the steel supporting frame work, and to make it strictly as per full sized details, to the satisfaction of the architect. The iron frame work and lookouts were of 2 x 2 x 1/4 in. angles and 1/8 in. steel plates, all heavily galvanized, built in and securely bolted to the masonry.

All the galvanized iron work of this cornice, including all the frame work and concealed surfaces, were given two coats of red lead paint before it was set in place.

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	SHEET METAL STAIRWAY ENCLOSURE & CORNICE-CARNEGIE BLDG. PITTSBURGH, PA.	DRAWING NUMBER 30



ITEM I
SECTION OF CORNICE
SCALE 1"= 1'-0"

ITEM II
PARTIAL FRONT ELEVATION
SCALE 1"=1'-0"

ITEM IV
FIELD SEAM AT F OF ITEM I

ITEM V
FIELD SEAM AT F° OF ITEM I

ITEM VI
FIELD SEAM AT Fˣ OF ITEM I

NOT DRAWN TO SCALE

ITEM III
PLAN OF SOFFIT PANEL
SCALE 1"=1'-0"

NOTE:-
While this Cornice could be erected as one unit from top to bottom, it is recommended that it be as four unit courses with field seams as indicated; other joints, seams and so forth can be at convenience of constructor, but in approved manner.

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	DETAILS OF SHEET METAL CORNICE ON ELYRIA BANK OF SAVINGS.	DRAWING NUMBER 21

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	METAL CORNICE ON ELYRIA BANK BUILDING—ELYRIA, OHIO	DRAWING NUMBER 21A

A Vertically Curving Cornice

THE primary reason of giving Plate No. 29 a place in this booklet is to illustrate a building surmounted by a circular cornice in metal in which the arcs curve in a vertical plane.

The view reproduced is that of the Whitehall Building in the downtown section of New York City. This also is a cornice which has stood the test of time, as the building was erected a goodly number of years ago.

An Example of Circular Cornice Work

AS is well illustrated in Drawing No. 25, the use of sheet metal in cornice construction is not restricted to what might be termed straight work, for in this illustration is shown what is known as circular cornice work.

Not only is it possible to have the cornice curve horizontally, as in this case, but where the architect wishes he can design the cornice with the arcs in a vertical plane.

The building shown in Plate 25 is that of the Kenwood Hotel, Chicago, and as stated in the foregoing, has been selected for illustration purposes in this book primarily to emphasize the fact that sheet metal can be used in circular cornice construction.

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	EXAMPLE OF VERTICALLY CURVED CORNICE	DRAWING NUMBER 29

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	SHEET METAL CORNICE ON KENWOOD HOTEL - CHICAGO, ILL.	DRAWING NUMBER 25

Cornice and Tracery Balustrade

A BALUSTRADE to be made of sheet metal need not have the conventional baluster posts, but can have the solid panel parapet effect between the pilasters, or it can have an open tracery effect as per Item I, of Drawing No. 5. This drawing shows a handsome structure which is surmounted by a classical cornice and superimposed tracery balustrade, all executed in sheet metal.

There are two well designed lanterns, also made of sheet metal, on either side of the doorway. The design and construction of these are shown in Items II and III.

An enlarged partial elevation of the cornice and balustrade together with the conductor and conductor head are as per Item IV. The cornice has only plain molding members, embellished simply by a dentil course and modillions. The only stamped enrichment thereon are the rosettes in the soffit panels of the planceer. The balustrade is likewise very plain, although the slender pilasters and the square, oblong and lozenge tracery of square tubing is decidedly graceful and pleasing in the effect, which is also true of the rather unique design of the conductor head.

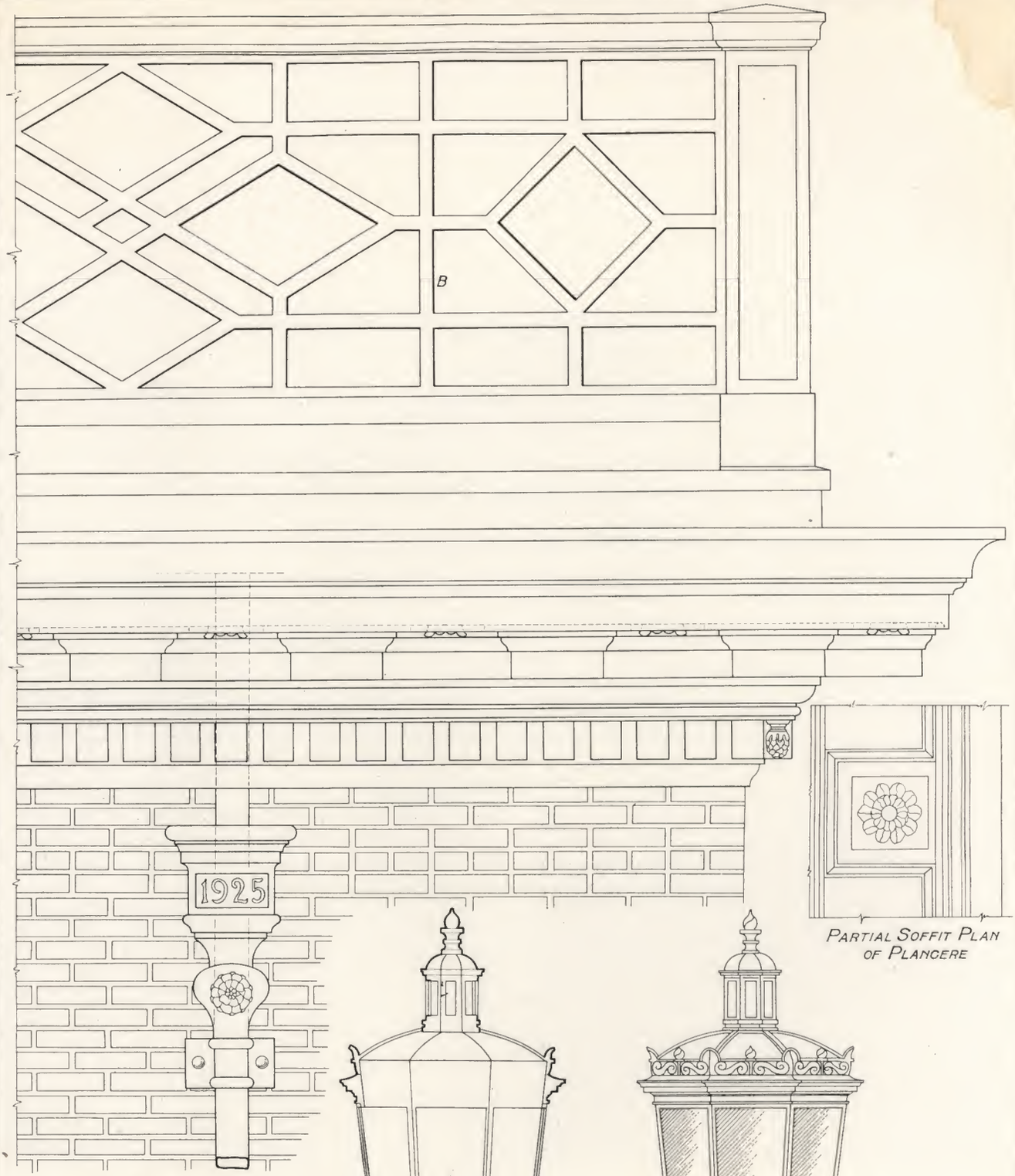
To support the cornice the customary construction of wooden lookouts is employed as per Item V, Drawing No. 5B. Note the usual band iron brace, which is bolted to the cornice during fabrication in the shop. There are joints at various places in the cornice, which should be situated as required by the size of the sheets used, and should be the standard type as illustrated throughout this book. The dentils, modillions and rosettes are not integral to the cornice proper, but are separate parts and planted on to it in the conventional methods.

The gutter formed in the top of the cornice is lined with sheet metal in the usual manner. An outlet for the gutter pierces the cornice and connects with the conductor which is ornamented by a head and band as shown. The rosette of the head is of stamped sheet metal. The date letters are hand-made and all are planted on in the customary manner.

A vertical section of the balustrade is as per Item V. Note how the top and bottom rails are stiffened and supported by cross framing. The details of the frame for the pilasters are shown by Item VII. After the wooden frame is in position, it is flashed with sheet metal and the pilasters set over it. The framing can be structural steel if preferred.

To facilitate assembling, the backs of the various parts are made separate and joined to the parts by the conventional pocket seam illustrated in Item VIII, or as an alternate, Item IX. All parts of the tracery may be left hollow without any internal bracing whatever, except the uprights at the pilasters, as *A* and *A* of Item VII and *B* of Item IV, Drawing No. 5A, which should have wood blocking, as shown in Item X, Drawing No. 5B. In this item is shown how the joints of the various parts of the tracery are made. All uprights should be made in one piece from bottom rail to top rail, and only the sides cut away to admit the laps of the cross members of the tracery, because it is best to place all laps on the inside for the sake of appearance, and, of course, all should be thoroughly soldered and riveted.

As per Item I, Drawing No. 5, the building has open balconies, which have at each floor a cornice and a balustrade to act as a railing. Enlarged details of these are presented as Items XI and XII, Drawing 5C. The cornice and balustrade are framed and supported much the same way as the main cornice, only it is especially advisable to secure the pilasters strongly to the wall to make sure that the balustrades cannot possibly be pushed out.



ITEM IV
PARTIAL ELEVATION OF CORNICE, BALUSTRADE AND CONDUCTOR
SCALE $\frac{1}{2}$"=1'-0"

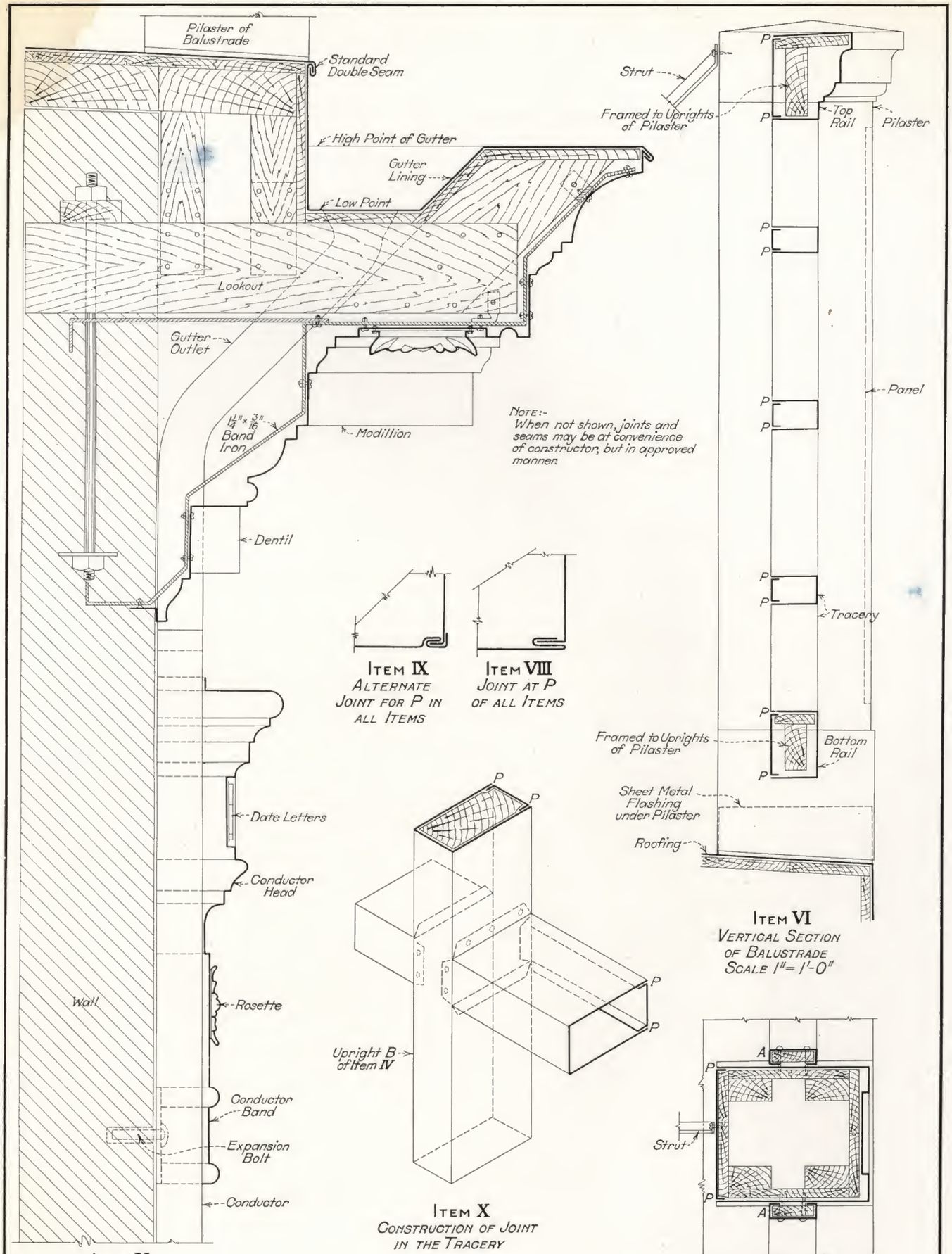
PARTIAL SOFFIT PLAN OF PLANCERE

ITEM II
VERTICAL SECTION OF ENTRANCE LANTERN

SCALE 1"=1'-0"

ITEM III
FRONT ELEVATION OF ENTRANCE LANTERN

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	DETAILS OF CORNICE, BALUSTRADE, CONDUCTOR & LANTERN	DRAWING NUMBER 5A



ITEM V
VERTICAL SECTION OF THE CORNICE
SCALE 1"= 1'-0"

ITEM IX
ALTERNATE JOINT FOR P IN ALL ITEMS

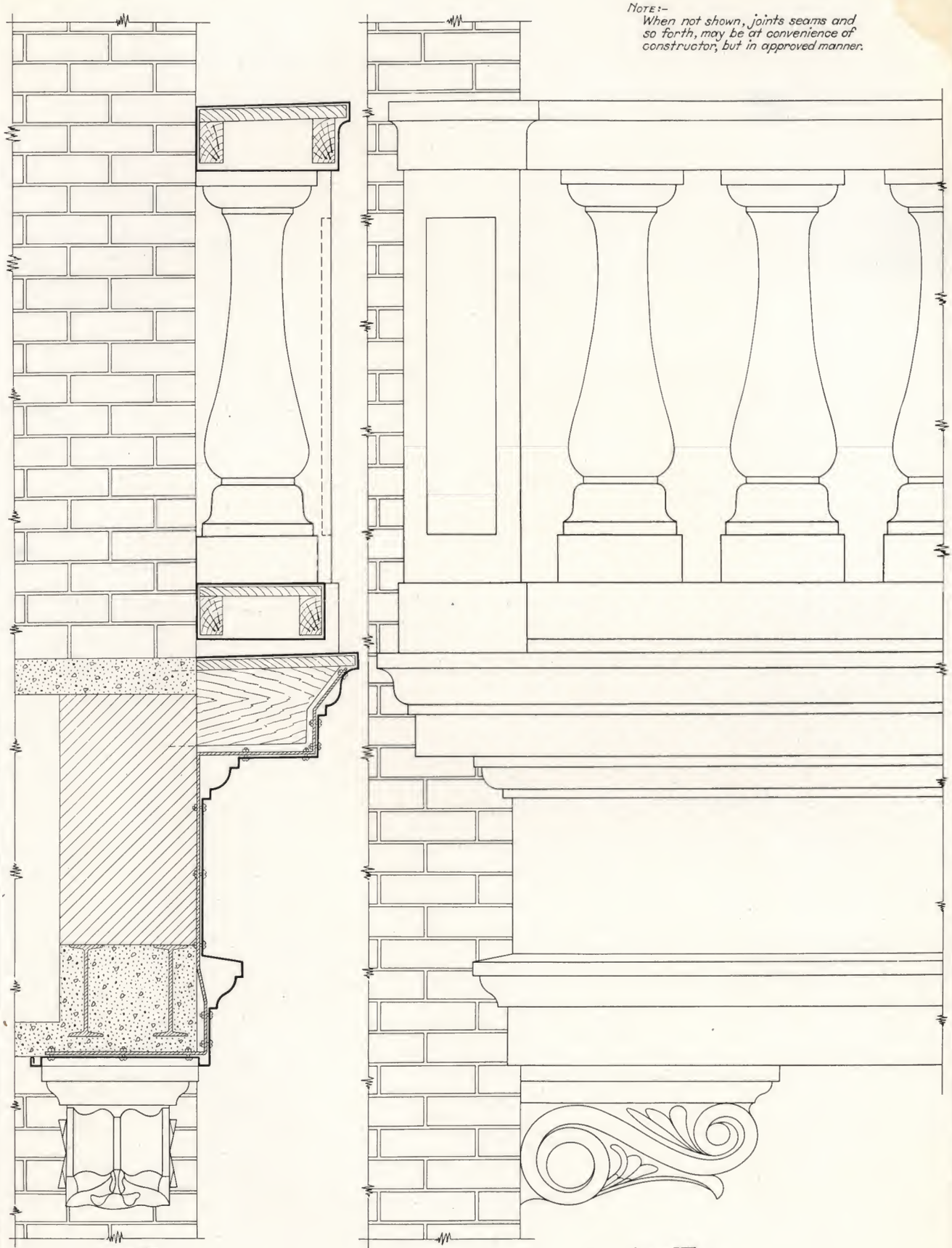
ITEM VIII
JOINT AT P OF ALL ITEMS

ITEM X
CONSTRUCTION OF JOINT IN THE TRACERY

ITEM VI
VERTICAL SECTION OF BALUSTRADE
SCALE 1"= 1'-0"

ITEM VII
HORIZONTAL SECTION OF PILASTER
SCALE 1"= 1'-0"

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	SECTIONAL DETAILS OF CORNICE, CONDUCTOR & BALUSTRADE	DRAWING NUMBER 5B



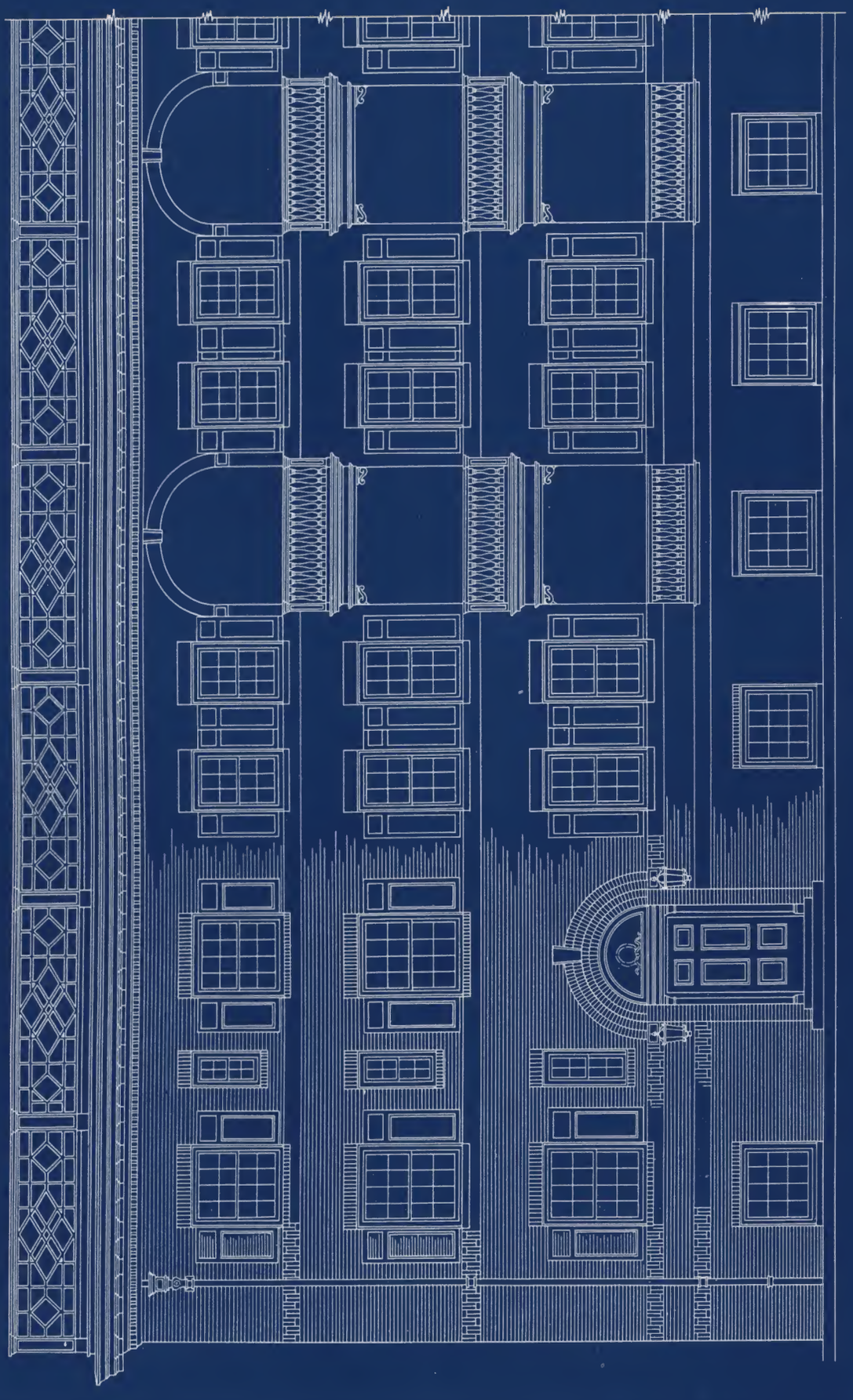
NOTE:-
When not shown, joints seams and so forth, may be at convenience of constructor, but in approved manner.

ITEM XI
SECTIONAL DETAILS

SCALE 1"=1'-0"

ITEM XII
PARTIAL FRONT ELEVATION

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	DETAILS OF BALCONY BALUSTRADES AND CORNICES	DRAWING NUMBER 5C



ITEM I
ELEVATION OF BUILDING
SCALE IN FEET 0 5 10

TRADE DEVELOPMENT COMMITTEE
NATIONAL ASSOCIATION
SHEET METAL CONTRACTORS

DETAILS OF SHEET METAL CORNICE AND TRACERY BALUSTRADE

DRAWING NUMBER 5

A Quarter-Century Old Design

THE cornice shown in Plate No. 26 was designed and erected a quarter of a century ago. It, too, is an outstanding example of the ability of the sheet metal contractor to work out in metal almost any cornice design the architect may portray.

This cornice surmounts the Belmont Hotel, Park Avenue and Forty-second Street, New York City, and although in position ever since the building was erected, approximately 25 years ago, is still in excellent preservation.

It is made of heavy copper and its great overhang, its massive brackets and other ornamentation, together with its color as the result of natural ageing, have brought forth favorable comments not only for the architect who designed it but for the sheet metal industry that produced it.

TRADE DEVELOPMENT COMMITTEE NATIONAL ASSOCIATION SHEET METAL CONTRACTORS	A MASSIVE CORNICE ON A NOTABLE BUILDING	DRAWING NUMBER 26

General Suggestions on Specifications for Sheet Metal Cornices

Material in General

(1). All material specified should be of the highest grade of its respective kind, with the gauges, weight per square foot, and brand indicated. Materials suited for sheet metal cornices are Cold Rolled Sheet Copper of not less than 0.0215 in. in thickness, and weighing not less than 16 oz. to the square foot; Monel Metal of similar thickness and weight to the square foot as Cold Rolled Copper; Sheet Zinc of not less than 10 gauge, or 0.0202 in. in thickness, and weighing not less than 12 oz. to the square foot; Galvanized Sheet Iron or Steel of not less than 26 gauge, or 0.02 in. in thickness, and weighing not less than 14.5 oz. to the square foot. The above material may be crimped or left plain as the architect may specify.

(2). Wrought iron or rolled steel structural shapes, such as bands, angle iron and the like are suitable for internal or external supports, reinforcing, stiffening and bracing of sheet metal cornice or other architectural sheet metal work, irrespective of what material the sheet metal work is made. Brass is suitable for exterior bracing and supports in connection with copper work.

Lookouts, Braces, Stiffeners and Anchors

(3). All sheet metal cornices, ornamental parapets, balustrades, cresting and the like should be properly braced and supported by internal construction as indicated on the drawings. The architect should stipulate in the various contracts and specifications, which contractor is to provide the lookouts, braces, stiffeners, anchors and so forth, but in all cases, the sheet metal contractor should properly stiffen and support his work irrespective of the other provisions for the same in all the drawings, specifications and contracts. Where the construction of the building is such that wooden lookouts or supporting brackets are permissible, they should be shaped to follow the contour of the cornice insofar as it is possible to do so. They should be spiked to the frame of the building, or built into the wall and further secured to it by anchor bolts, or other such methods which will insure firm construction. In addition to these lookouts, other nailing strips and wooden blocks, which are built and anchored into the wall, should be provided. To these the cornice and the like, should be held by driving nails or screws through the sheet metal and into the wooden supports. These nails and screws are to be so placed as to be inconspicuous and not buckle the sheet metal.

(4). In addition to these wooden lookouts and for a more fireproof construction, and where the walls are of brick, the cornice should have a heavy band iron brace shaped to fit the cornice and bolted to the back of the cornice with round head stove bolts and washers, as indicated on the drawings. For copper work, brass bolts and washers should be used, and for work near the ground, it is permissible to countersink the braces for flat-head bolts for flush construction. Anchors of band iron should be attached to the band iron braces and built into the wall, and it is understood that the wooden lookouts support the cornice deck and sheet metal roofing of the cornice or the depressed gutter of the cornice. Instead of wood lookouts, a steel channel or other such structural steel shape of suitable size and weight, and firmly anchored into the wall or attached to the steel skeleton of the building, may be employed.

(5). For large cornices, the bracing should consist of a built up truss which fits the shape of the cornice, and should be composed of heavy angle iron, bands, plates and so forth as indicated on the drawings herein. These trusses should be firmly bolted and anchored into the wall or spliced to the steel skeleton of the building, and the cornice bolted thereto.

(6). The spacing of the lookouts, braces, stiffeners and anchors should be governed by the physical conditions of the particular job. In all cases, said spacing, however, should never exceed 3 ft. 6 in. or be such as to allow the roof deck boards to sag between the supports. Special care should be exercised to have the top member of the crown mold well supported by these roof boards, even to the introducing of a special continuous bar or angle iron at that cornice member, to preclude any possibility of the cornice crown mold being crushed. These remarks apply also to parapets and like construction.

Seams, Joints and Miters

(7). All seams, joints and the like should be made as strong as possible. Their location and type can be at the convenience of the sheet metal contractor, but shall be in approved manner, as exemplified by the drawings herewith, and so as to be unnoticeable on the outside of the sheet metal work when viewed at a reasonable distance. No dependance should be placed on soldering alone, but all joints, seams, miters and the like should be closely riveted. Copper rivets should be used for copper work. In lieu of riveting, and as indicated in the drawings, it shall be permissible to utilize pocket seams, clinch edges and notches, which will prevent the seams, joints, miters and the like from giving away, when subjected to the heat of a fire, or the stresses of expansion and contraction or vibration of the metal.

(8). In enriching sheet metal cornices with brackets, modillions, dentils, egg-and-dart molding and the like, the cornice at that place can be made as a solid body and these parts planted thereon. To do that, no dependance

should be placed on solder alone, but they should be riveted, lock seamed, clinch edged or held by twisted wires through their back to the cornice as indicated on the drawing herein.

Drips

(9). Wherever water spills over the outer edge of the cornice or parapet deck, a drip should be formed by making a drip hook seam where the deck roofing connects with the crown mold of the cornice and as indicated on the drawings. Where this is not feasible, for example, where it is desirable to have a smooth edge along the crown mold, which necessitates a standard flat seam connection on the roof deck for cornice and roofing, the ogee or other such top member, should be formed with an undercut which will precipitate the water from the roof deck away from the cornice and not streak it. A drip should also be formed at the base of the foot molding, as indicated on the drawings, to create a proper joint with the wall. These remarks apply likewise to copings, parapet tops and the like.

Painting and Cleaning

(10). All sheet metal work and its metal bracings other than copper should be thoroughly cleaned by removing all soldering flux, acids, oils and dirt, and should be given at least one coat of good paint.

(11). The committee is not recommending in this booklet any particular ingredients to be used in the paint as the various sections of this country, owing to their special climatic conditions, may require special treatment. Architects, engineers and sheet metal contractors should study local conditions in this respect and specify accordingly.

(12). Copper work need not be painted but should be left thoroughly cleaned and oiled with linseed oil to secure a uniform color.